

CLAIMS

What is claimed is:

1. An arteriovenous shunt comprising:
 - a. an arterial graft comprising a body, a lead end and a terminal end, wherein said lead end is operable for subcutaneous connection to an artery by anastomosis; and
 - b. a single lumen venous outflow catheter comprising an intake end and depositing end, wherein said depositing end is operable for insertion through a vein into the right atrium of the heart; and
 - c. a cuff comprising an inlet and an outlet, wherein:
 - i. said inlet is connected to said terminal end of said subcutaneous graft; and
 - ii. said outlet is connected to said intake end of said venous outflow catheter.
2. The arteriovenous shunt of claim 1 wherein said subcutaneous graft is made of a biocompatible flexible material.
3. The arteriovenous shunt of claim 2, wherein said biocompatible flexible material is polytetrafluoroethylene (PTFE) or polyurethane.
4. The arteriovenous shunt of claim 1, wherein said arterial graft has a diameter from about 2 mm to about 8 mm and a length from about 20 cm to about 60 cm.
5. The arteriovenous shunt of claim 4, wherein said arterial graft has a diameter of from about 6 mm to about 8 mm and a length of about 40 cm.
6. The arteriovenous shunt of claim 1, wherein said artery is the brachial, axillary, femoral or external iliac artery.

7. The arteriovenous shunt of claim 1, wherein said cuff is Teflon or Dacron.
8. The arteriovenous shunt of claim 1, wherein said venous outflow catheter has a diameter from about 1 mm to about 7 mm and a length of from about 20 cm to about 80 cm.
9. The arteriovenous shunt of claim 1, wherein said venous outflow catheter has a diameter from about 5 mm to about 7 mm and a length of from about 40 cm to about 60 cm.
10. The arteriovenous shunt of claim 1, wherein said venous outflow catheter is made of polyurethane or silicone.
11. The arteriovenous shunt of claim 1, wherein said vein is the cephalic, axillary, jugular, femoral or external iliac vein.
12. The arteriovenous shunt of claim 1, wherein said venous outflow catheter has a diameter of about 1 mm smaller than the subcutaneous graft.

13. A system for performing hemodialysis on a patient comprising:
 - a. an arteriovenous shunt comprising:
 - i. an arterial graft comprising a body, a lead end and a terminal end, wherein said lead end is operable for subcutaneous connection to an artery by anastomosis; and
 - ii. a single lumen venous outflow catheter comprising an intake end and depositing end, wherein said depositing end is operable for insertion through a vein into the right atrium of the heart; and
 - ii. a cuff comprising an inlet and an outlet, wherein:
 1. said inlet is connected to said terminal end of said subcutaneous graft; and
 2. said outlet is connected to said intake end of said venous outflow catheter; and
 - b. a hemodialysis apparatus.
14. The system according to claim 13, wherein said venous outflow catheter has a diameter of about 1 mm smaller than said subcutaneous graft.
15. The system according to claim 13, wherein said artery is the brachial, axillary, femoral or external iliac artery.
16. The system according to claim 13, wherein said vein is the cephalic, axillary, jugular, femoral or external iliac vein.

17. A method of performing hemodialysis on a patient comprising:
 - a. inserting an arteriovenous shunt into a patient, wherein said arteriovenous shunt comprises:
 - i. an arterial graft comprising a body, a lead end and a terminal end, wherein said lead end is operable for subcutaneous connection to an artery by anastomosis; and
 - ii. a single lumen venous outflow catheter comprising an intake end and depositing end, wherein said depositing end is operable for insertion through a vein into the right atrium of the heart; and
 - iii. a cuff comprising an inlet and an outlet, wherein:
 1. said inlet is connected to said terminal end of said subcutaneous graft; and
 2. said outlet is connected to said intake end of said venous outflow catheter;
 - b. connecting said arterial graft to a hemodialysis apparatus;
 - c. collecting blood from the patient through said subcutaneous graft;
 - d. passing said blood through the hemodialysis apparatus;
 - e. collecting purified blood from hemodialysis apparatus; and
 - f. transmitting said purified blood through said cuff into said venous outflow catheter.
18. The method according to claim 16 wherein said venous outflow catheter has a diameter of about 1 mm smaller than said subcutaneous graft.
19. The method according to claim 16, wherein said artery is the brachial, axillary, or femoral, external iliac artery.
20. The method according to claim 16, wherein said vein is the axillary, jugular, femoral or external iliac vein.